APPENDIX G

FWQG POST-HARVEST FIELD REVIEW FORM

FOREST WATER QUALITY GUIDELINES
POST-HARVEST FIELD REVIEW

TEAM LEADER/RECORDER: _____ NOTIFICATION NUMBER: _____

DATE: ___/___/___

TEAM MEMBERS: _____

_____

GENERAL SITE DESCRIPTION

Sale/Project Name:		Operator/Contractor:	
Location: T___ ❑N ❑S; R ___ ❑E ❑W	Section(s):	County:	Acres:
Ownership: ❑ State ❑ Private ❑ Federal ❑ Other	Watershed:		HUC:

SITE CONDITIONS (✔all that apply)

Soil Erodibility	Topography	Slope	Aspect (in degrees)	Water Resource(s)	Stream Crossings
❑ High	❑ Flat	❑ 0-5%	❑ 0-90	❑ Class I Stream	❑ Ford # _____
❑ Medium	❑ Gentle	❑ 5-20%	❑ 90-180	❑ Class II Stream	❑ Culvert # _____
❑ Low	❑ Moderate	❑ 20-40%	❑ 180-270	❑ Reservoirs, lakes, etc.	❑ Bridge # _____
	❑ Steep	❑ 40%+	❑ 270-360	❑ Wetland	

PRACTICES (✔all that apply)

Forest Water Quality Guidelines

❑ Pre-harvest Planning ❑ Timber Harvesting ❑ Streamside Mgm't Zone
❑ Prescribed Fire ❑ Chemical Mgm't ❑ Forested Wetland
❑ Roads, Trails, Crossings & Landings ❑ Site Prep, Regeneration & Re-Vegetation

℞ System Used	Species Harvested	Harvest Method	Roads	Slash disposal
❑ Seed Tree	❑ P. Pine ❑ Spruce/fir	❑ Ground	❑ New construction _____ mi.	❑ Pile & Burn
❑ Shelterwood	❑ LP Pine ❑ Aspen	❑ Cable	❑ Reconstruction _____ mi.	❑ Lop & Scatter
❑ Clearcut	❑ Doug-Fir ❑ White fir	❑ Aerial	❑ Improvement _____ mi.	❑ Crush/Chip
❑ I/G Selection	❑ Mixed Conifer			❑ Brdcst. Burn

RATING GUIDE

APPLICATION
5 - Operation exceeds FWQG
4 - Operation meets FWQG
3 - Minor departure from FWQG
2 - Major departure from FWQG
1 - Gross neglect of FWQG

EFFECTIVENESS
6 - Improved protection of *forest*, soil & water resources
5 - Adequate protection of *forest*, soil & water resources
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DEFINITIONS

ADEQUATE: FWQG applied correctly; small amount of material eroded; material does **not** reach drainages, streams, lakes or wetlands.

MINOR: FWQG applied incorrectly; small impact potential; erosion and delivery of material to water resources **not** clearly evident.

MAJOR: FWQG not applied; large impact potential; erosion and delivery of material to water resources clearly evident.

GROSS: Gross neglect of FWQG application; disregard for soil erosion and water quality; large and direct impacts are clearly evident.

TEMPORARY: Impacts lasting one year or less; no more than one runoff season.

PROLONGED: Impacts lasting more than one year.

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STREAMSIDE MANAGEMENT ZONE	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Recommended SMZ width and "undisturbed strip" is maintained. Indicate average width based on stream class: _____ft.				
2. The SMZ boundary is clearly marked with flagging, paint or signs.				
3. Adequate tree, shrub and other ground cover is maintained to avoid potential regeneration problems, promote bank stabilization and sediment trapping.				
4. Exclusion of heavy equipment and skidders in the SMZ except on established roads.				
5. Minimize soil disturbance and restrict mechanical site preparation in the SMZ.				
6. Exclusion of slash in the SMZ from adjacent areas. Exclusion of piling and burning in the SMZ.				
7. Avoid skidding in the SMZ to prevent channel damage, build-up of destructive runoff flows and erosion .				

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ROADS, SKID TRAILS, LANDINGS & STREAM CROSSINGS **Planning for Roads**	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Plan roads to fit within transportation networks and that fit the natural terrain as much as possible. Minimize road construction, cuts, fills and the number of roads within the harvest area.				
2. Locate and design roads upslope of natural drainages to allow road surfaces to drain. Road surface slope should utilize natural drainage as much as possible. Design cross culverts, ditches, dips, water bars to direct water off road surface.				
3. Avoid sustained excessive grades of 10-20%.				
4. Avoid road construction in unstable areas.				
5. Minimize the number of stream crossings. Cross streams at right angles to channel to reduce sedimentation and debris from entering the stream.				
6. Select the most appropriate stream crossing (ford, culvert, bridge).				
7. Design stream crossings to handle peak runoff and flood waters.				

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Road Construction	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Limit road construction activities during periods of excessive moisture or frozen ground.				
2. Roads constructed to prevent excess material (debris, soil) from entering streams.				
3. Road constructed to provide adequate drainage from the road surface (out-sloped, in-sloped) with appropriate features to reduce erosion.				
4. Dips, water bars and culverts are constructed to effectively provide surface flow off the road.				
5. Avoid constructing berms that may channel water down the road.				

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Stream Crossing	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Minimize the number of stream crossings.				
2. Placement of stream crossings should be timed to minimize water quality impacts when water flows are low, usually during late summer.				
3. Align placement of culverts with the natural grade of the stream channel. Place culverts slightly below the grade of the natural stream.				
4. Culvert protected against erosion by compacting fill material, providing rock armor, logs, seeding or other suitable material.				
5. Approaches to culverts compacted and graded to maintain a consistent road grade.				
6. Culverts and other stream crossing devices free and clear of debris.				
7. Plan stream crossings at right angles (perpendicular) to the stream channel.				

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Road Maintenance	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Avoid grading unless maintenance is necessary. Unnecessary grading creates additional source of sediment.				
2. Avoid cutting the toe of cut slopes when grading roads or pulling ditches.				
3. Avoid placing side-cast material, soil and gravel into streams, SMZs or other water bodies. Excess material produced from grading should be feathered out or hauled away.				
4. Avoid using roads during wet periods.				
5. Erosion control features periodically inspected and maintained.				

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Skid Trails	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Skid trails and skidding operations designed and located to minimize soil disturbance.				
2. Avoid skidding directly up and down steep slopes for long distances.				
3. Skid trails located away from natural drainage systems. Avoid concentrating runoff and limit grade where possible.				
4. Minimize skidding during wet periods to limit soil displacement and compaction.				
5. Appropriate water diversion devices installed to prevent channelization and erosion on skid trails.				
6. Locate skid trails outside SMZ's.				
7. Utilize appropriate skidding method commensurate with soil and topography.				

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Landings	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Landings located away from natural drainage systems and divert runoff to areas where vegetation can serve as a filter. For proper drainage, landings should be constructed with 3 to 10% slopes.				
2. Locate landings to avoid skidding down and across drainage bottoms.				
3. Minimize number and size of landings.				
4. Landings should be located outside SMZ's.				
5. Upon termination of operations, landings recontoured, revegetated and returned to a natural condition.				

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TIMBER HARVESTING	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Avoid excessive soil compaction.				
2. Avoid the use of ground-based equipment within the SMZ. Trees harvested in the SMZ should be end-lined or winched.				
3. Utilize harvesting system best suited to topography to avoid excessive compaction, damage to residual stand and ensure adequate regeneration and revegetation.				
4. When descending steep slopes, avoid the use of skidder blades for braking purposes.				
5. Adequate road and skid trail drainage structures installed prior to commencement of operations.				
6. Minimize slash accumulations and prevent excessive waste of resources by adhering to pre-determined utilization standards.				
7. Reduce or minimize the amount of soil in slash piles by using brush blades for piling.				
8. Avoid piling and burning slash in SMZ's.				
9. Locate skid trails to minimize damage to regeneration.				

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SITE PREPARATION, REGENERATION AND REVEGETATION	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Slash disposal and treatment, by use of fire or mechanical means, completed to ensure optimal conditions for regeneration without causing excessive damage to soil or residual stand.				
2. Scarify soil only to the amount necessary or required for successful regeneration of desired species.				
3. Residual stocking levels adequate and best suited to site conditions.				
4. Road cuts, fills and other disturbed areas revegetated and/or stabilized, re-contoured and seeded with appropriate seed mixture best suited to site conditions.				

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CHEMICAL MANAGEMENT	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Containers and facilities for chemical storage located outside the SMZ.				
2. Instructions, guidelines and all applicable laws followed when using pesticides and other chemicals.				
3. When using chemicals, petro-chemicals and anti-freeze, avoid mixing, fueling, servicing, spillage and cleaning equipment in or near streams, water bodies and SMZ's.				
4. Avoid draining used oil, fuel or anti-freeze onto the ground.				

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PRESCRIBED FIRE	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Prescribed burn plan prepared by qualified professional prior to burning.				
2. Appropriate location and construction of fire lines should follow contours and minimize soil disturbance.				
3. Minimize the impact of the burn to avoid excessive damage to residual vegetation and soil.				
4. Avoid piling and burning slash in SMZ's, lakes, reservoirs other water bodies.				
5. Minimize the amount of soil, dirt and other unburnable material in slash piles to allow efficient burning.				
6. Avoid burning on steep slopes where soil loss or erosion would occur.				

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FORESTED WETLANDS	**Applies? (Y/N)**	**Apply**	**Effect**	**Comments**
1. Avoid locating or constructing roads, trails and landings in wetlands.				
2. Avoid fueling or servicing equipment in wetlands.				
3. Avoid operation of equipment in areas of open water, seeps and springs.				
4. Conduct harvest activities in wetlands when ground is frozen, covered with snow or during extended dry periods to minimize rutting and compaction.				
5. Keep open water free from slash.				
6. Provide for adequate cross-road drainage to minimize changes to natural surface and subsurface wetland flows.				
7. Minimize rutting in wetlands. Where possible, skid around wetlands or endline felled trees out of wetland areas.				
8. Utilize low ground pressure equipment whenever possible.				
9. Avoid skidding through open wetland meadows and other wet areas.				
10. Divert runoff from roads, trails and landings to upland areas above wetlands to reduce silting of wetland area.				